IN THE SPECIFICATION

The following paragraph replaces the paragraph corresponding to page 10, line 22 of the specification:

It is also noted that additional datum planes may be added as features to the 3-D coordinate system as children just like any physical feature. These would be added as needed to position other physical features, or to place them on surfaces in addition to the datum plane 4. Any additional face planes needed to mount features should be at the same level as the 3-D coordinate system, that is to say a sibling of the original datum plane 4, not a child of it. In the example shown in FIGs. 1 and 2, such an added plane would be created as a child of the base feature 0 just as the third datum plane 4 is.

The following paragraph replaces the paragraph corresponding to page 12, line 21 of the specification:

It may be beneficial to ensure that the positioning of the base feature 0 with respect to the datum planes 2, 3, and 4 be chosen so as to make the most use of the base feature 0 as an interchangeable element. Note once again from FIG. 1, in that embodiment, the base-level datum plane was chosen to coincide with the center of the cylindrical base feature. By rotating the base-level datum plane symmetrically with the center of the base feature, all progeny will rotate symmetrically about the base feature as well. Differently shaped base features will suggest differently positioned base-level datum planes. In this embodiment depicted in FIG. 4, the physical features, or form features 5a-5g and the datum planes 2, 3, and 4 maintain an associative relationship, but neither with the base feature 0. When the 3-D coordinate system is established before the fundamental shape is placed on the screen and presented to the user, it simplifies substitution of the base feature 0 to other models. For example, where it may be desirable to change one base feature 0 for another, and yet preserve the later added physical features, or form features e.g., 5a-5g. The disclosed embodiment simplifies this process by eliminating the parent child relationship between the base feature 0 and the datum planes.

Therefore the base feature 0 may be removed and substituted with ease. Moreover, the physical features, or form features 5a-5g and the datum planes 2, 3, and 4 may easily be adapted to other base features of other models.

The following paragraph replaces the paragraph corresponding to page 18, line 10 of the specification:

Referring to FIGs. 8 and 9, to initiate the manufacturing process and virtual machining, once again, a suitable blank may be selected or created, for example, a cast piece, the dimensions and measurements of which, are used as the virtual blank 10 for the virtual machining of the 3-D parametric solid model with the horizontally structured manufacturing method. Alternatively, a virtual blank 10 may be selected, and a blank could be manufactured to match it. This alternative may prove be less desirable as it would incorporate additional machining which would not be necessary if the virtual blank 10 initiates with the blank's dimensions. It is nonetheless stated to note that the method disclosed includes, and is not limited to a variety of approaches for establishing the blank and a representative virtual blank 10 for the model.

The following paragraph replaces the paragraph corresponding to page 18, line 21 of the specification:

For example, in the Unigraphics® environment, a suitable blank or component is selected. A virtual blank 10 is generated therefrom, commonly a referenced set of geometries from a model termed a reference set 26 as shown in FIGs. 8 and 9 (e.g., a built up product model of a part). From this referenced set of geometries 26, a three-dimensional virtual blank 10 model may be generated or created, for example, via the Wave link or Promotion process of Unigraphics®, which includes all of the modeled details of the completed part.

The following paragraph replaces the paragraph corresponding to page 18, line 28 of the specification:

Once a virtual blank 10 has been established that corresponds to a real-world blank, a horizontally-structured 3-D parametric solid model is generated or created in a manner that describes machining operations to be performed on the blank so as to produce the final real-world part. This horizontally structured model will be referred to as the master process model 20. It is noteworthy to appreciate that the master process model 20 depicted in FIGs. 8 and 9 includes with it, but is not limited to, the virtual blank 10, added manufacturing features 12a-12j by way of virtual machining, and datum planes 2, 3, and 4 all in their respective associative relationships as exhibited from the geometries and characteristics of the reference set 26.